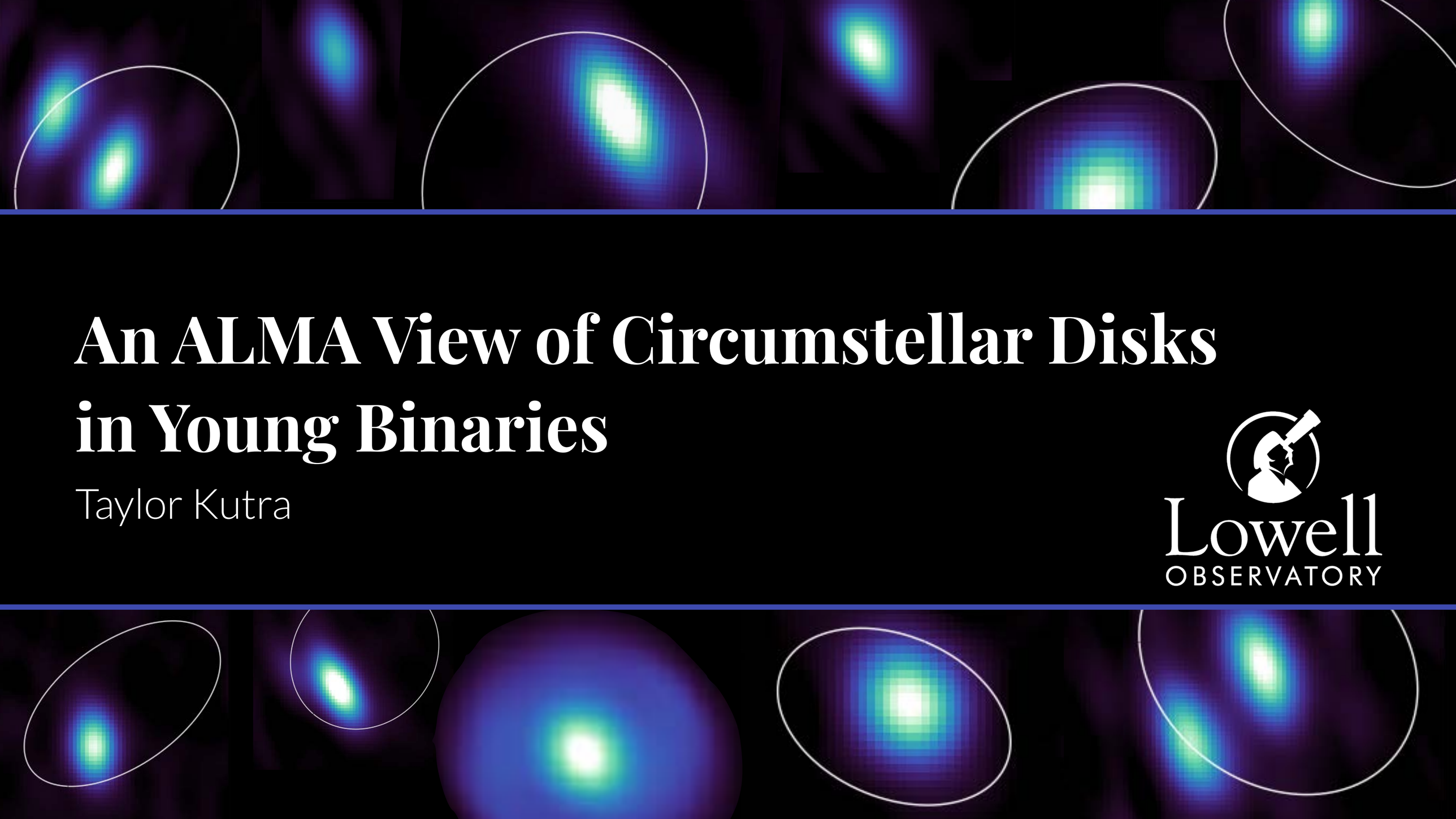
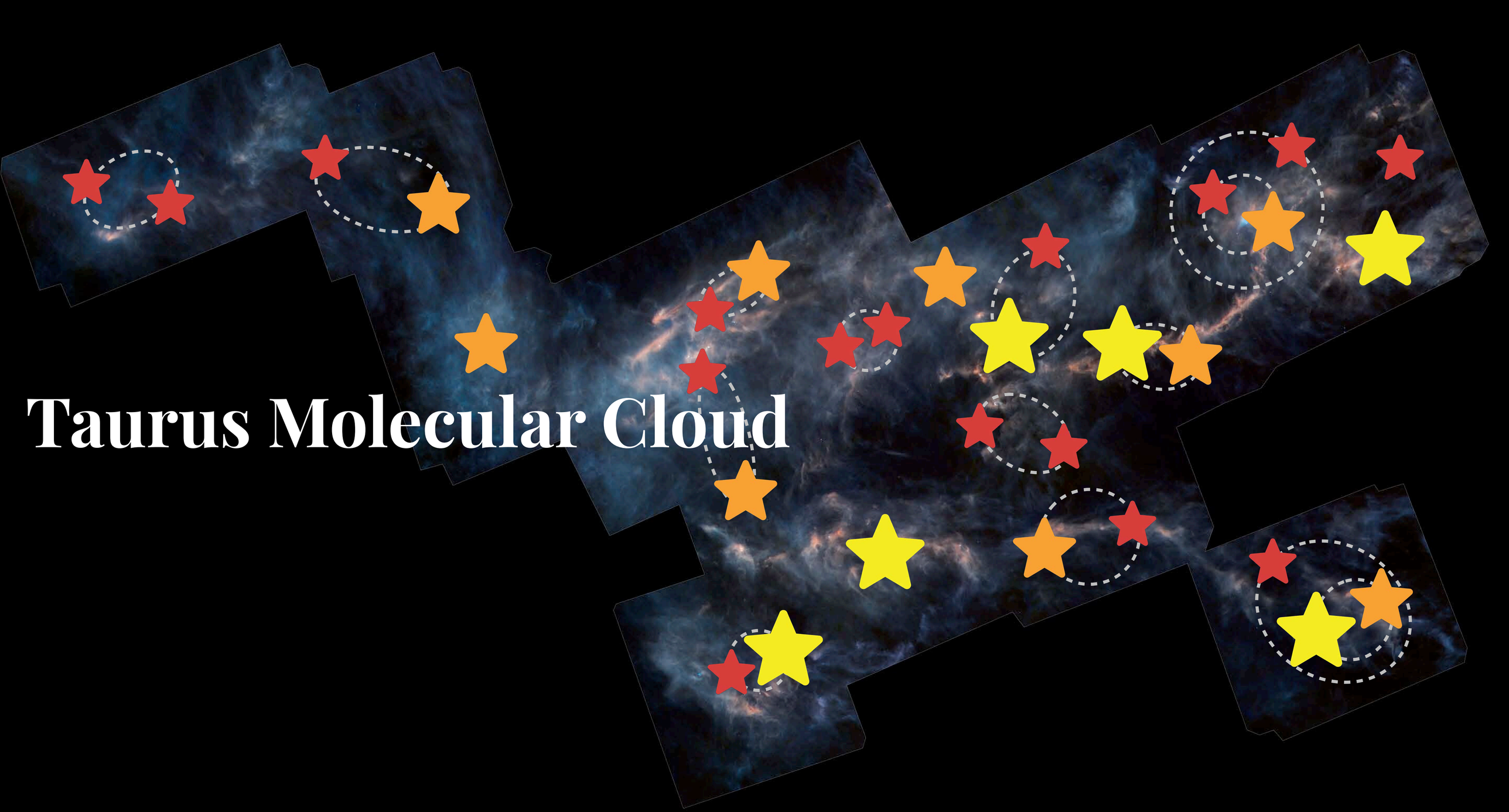


An ALMA View of Circumstellar Disks in Young Binaries

Taylor Kutra

Lowell OBSERVATORY

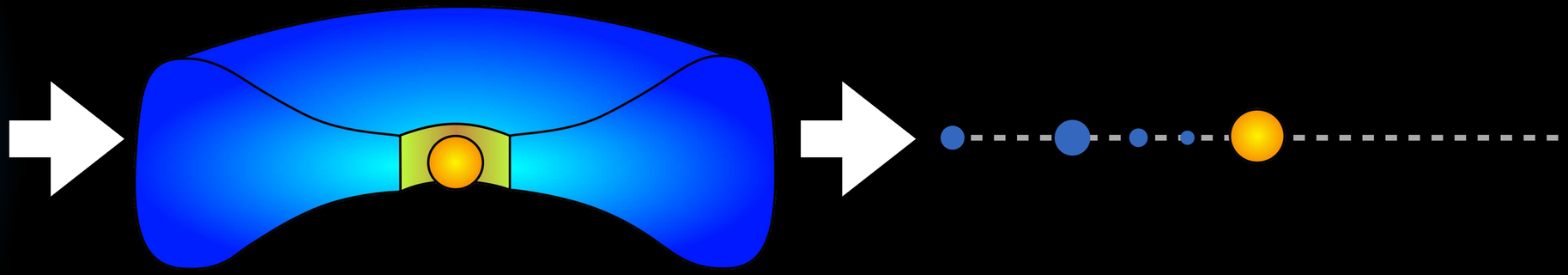


Taurus Molecular Cloud

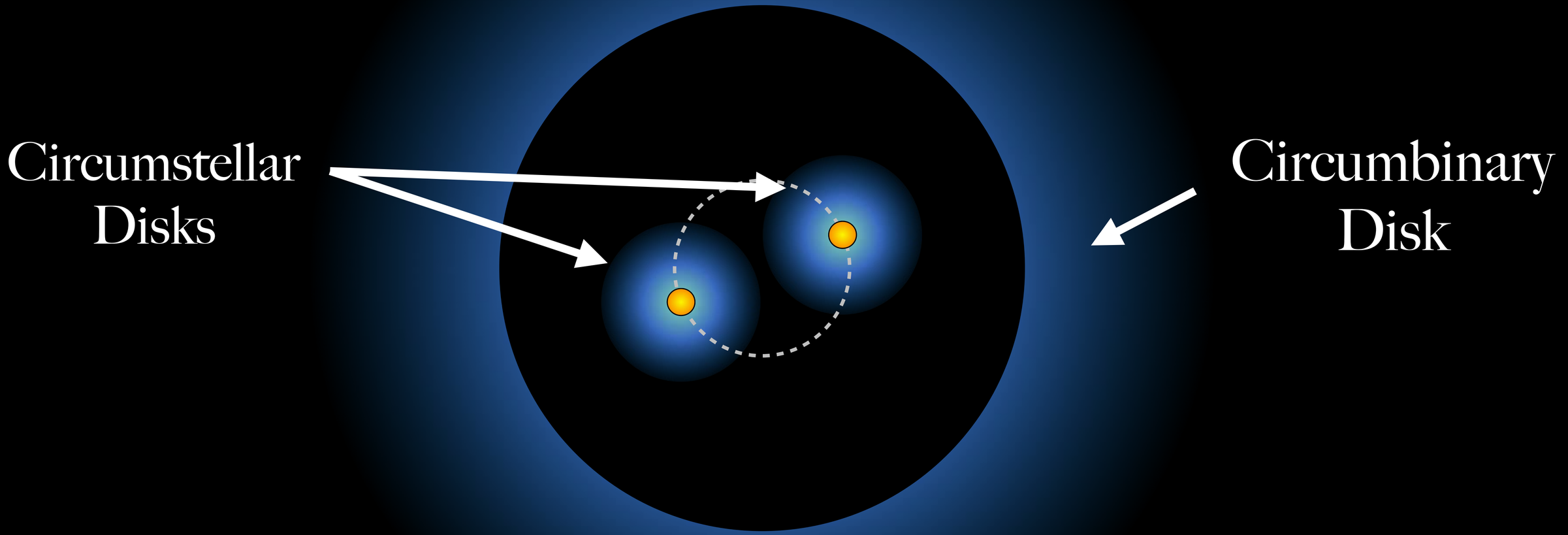
Taylor Kutra: tkutra@lowell.edu

Credit: ESA/Herschel/NASA/JPL-Caltech, R. Hurt (JPL-Caltech)

Single star (and planet formation)



Young binaries also have disks...

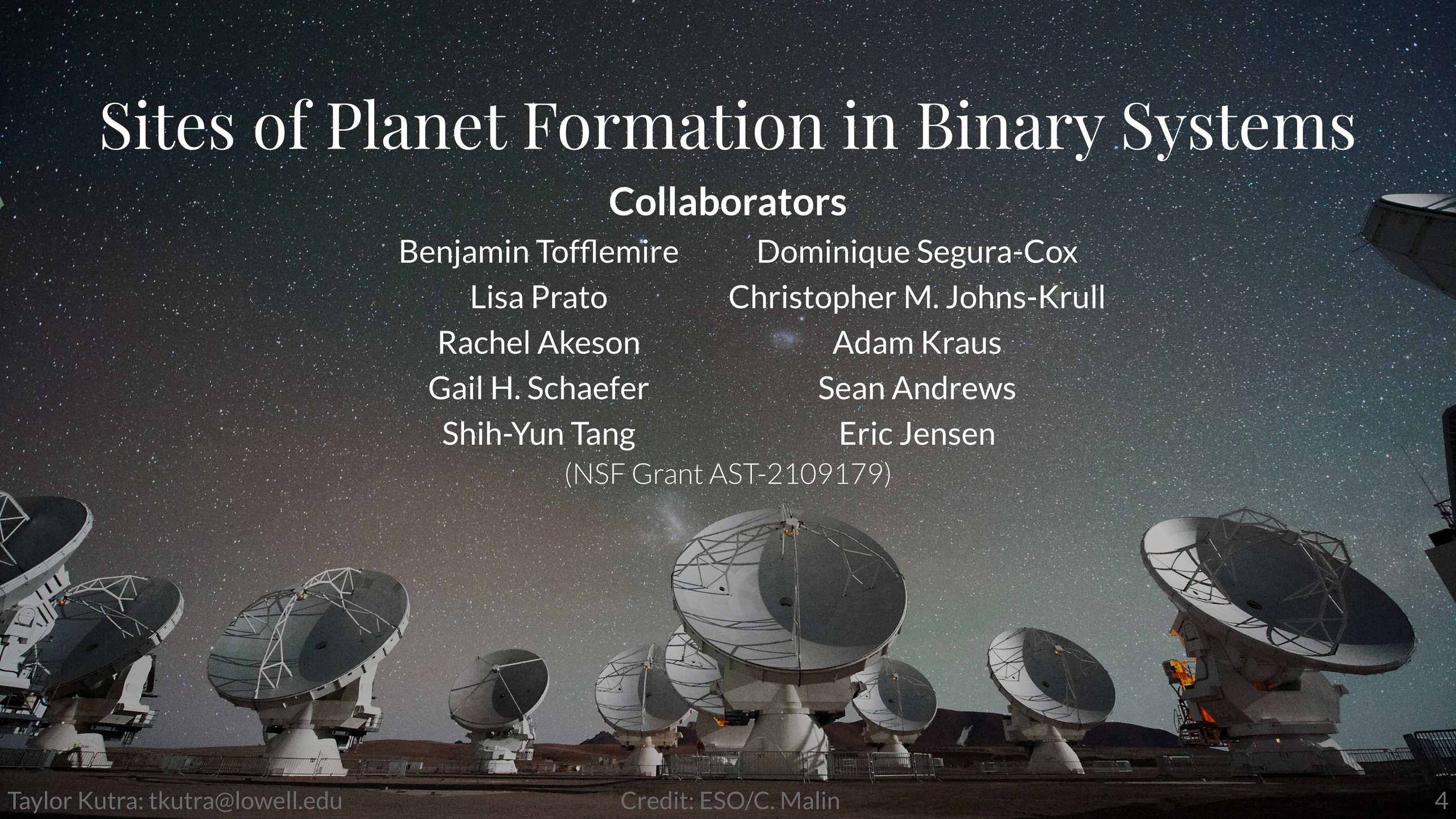


Sites of Planet Formation in Binary Systems

Collaborators

Benjamin Tofflemire
Lisa Prato
Rachel Akeson
Gail H. Schaefer
Shih-Yun Tang
Dominique Segura-Cox
Christopher M. Johns-Krull
Adam Kraus
Sean Andrews
Eric Jensen

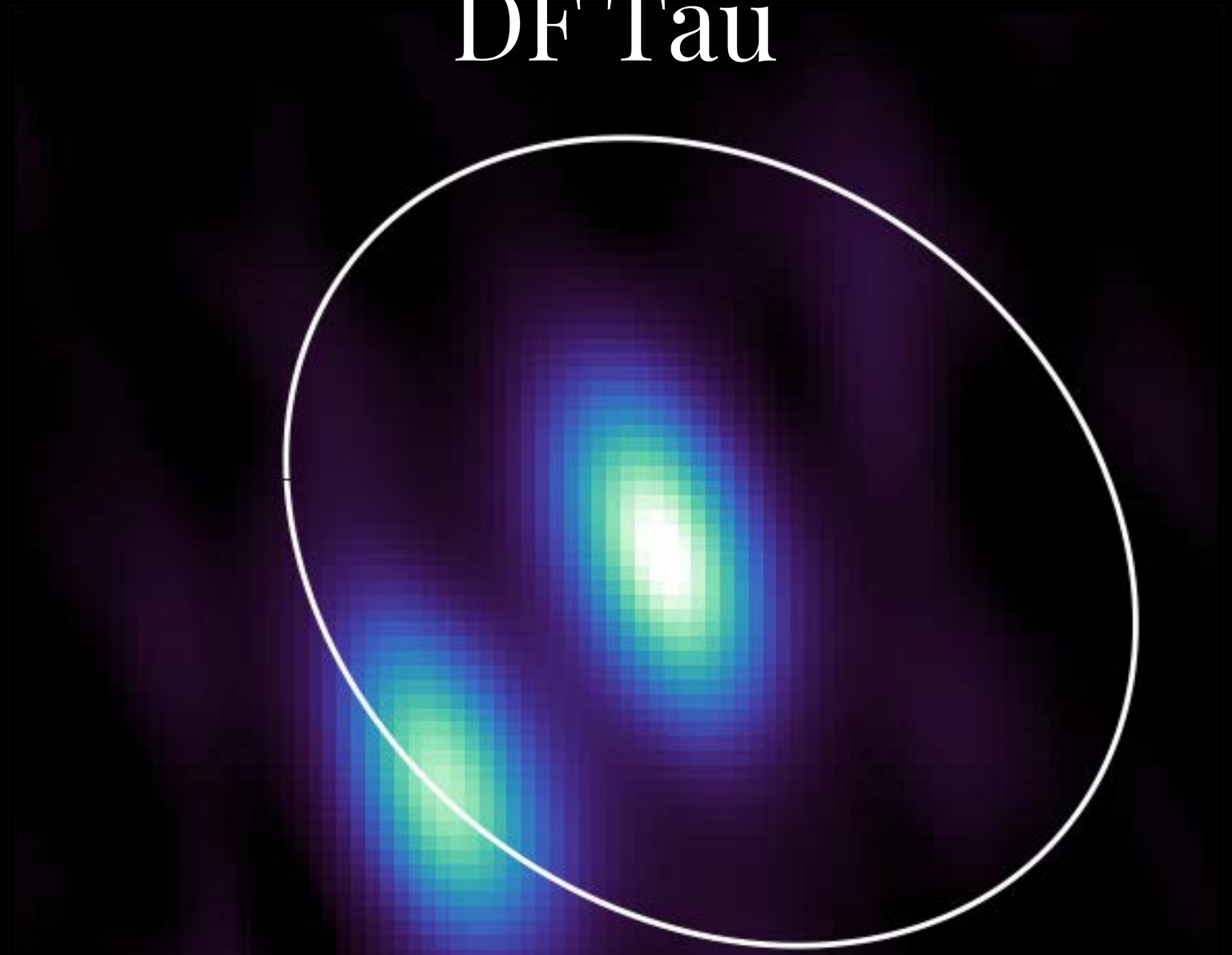
(NSF Grant AST-2109179)



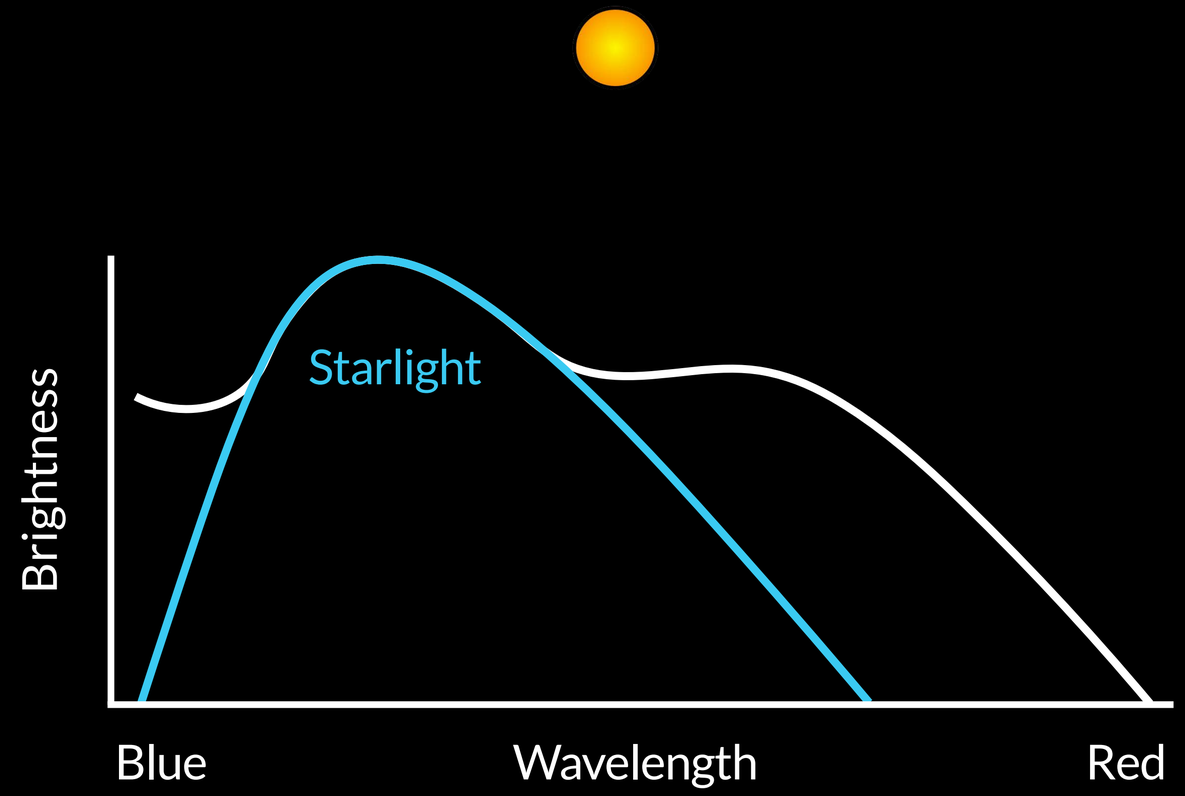
Taylor Kutra: tkutra@lowell.edu

Credit: ESO/C. Malin

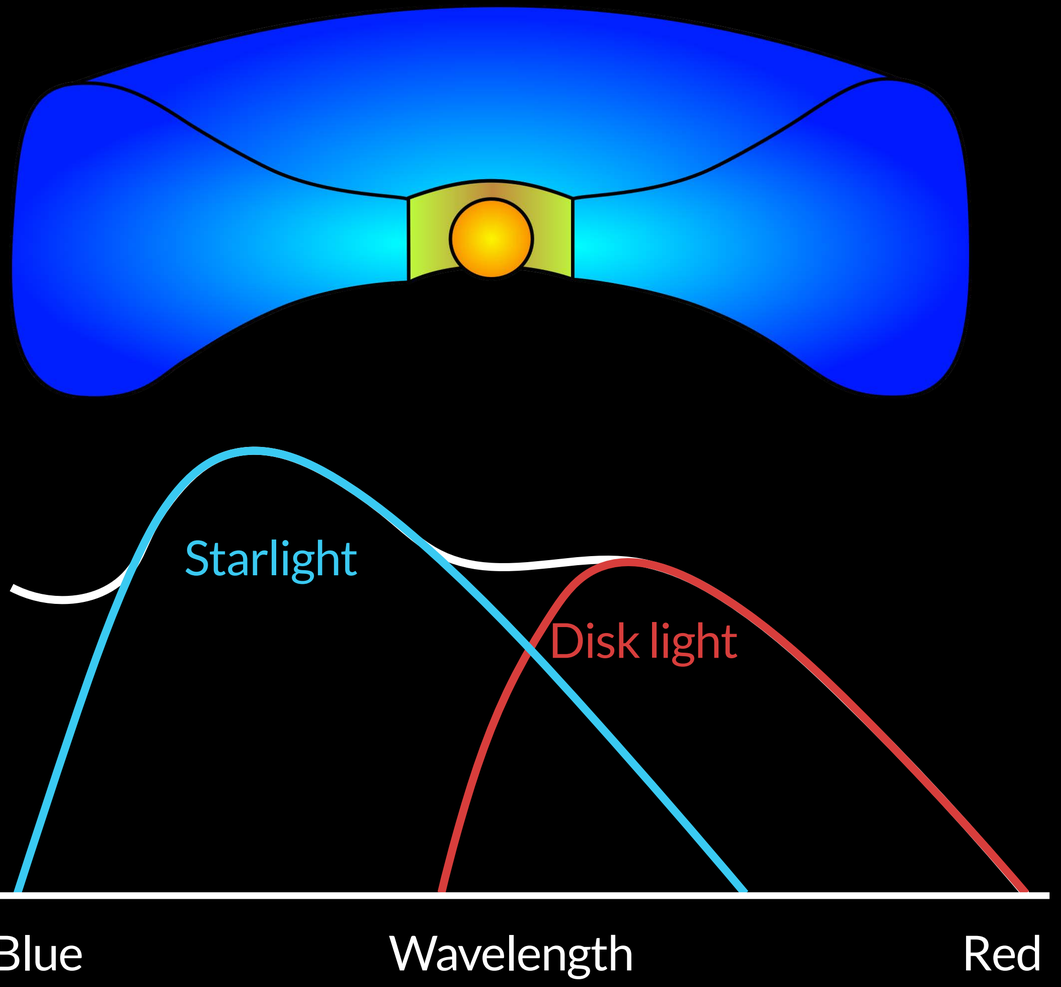
DF Tau



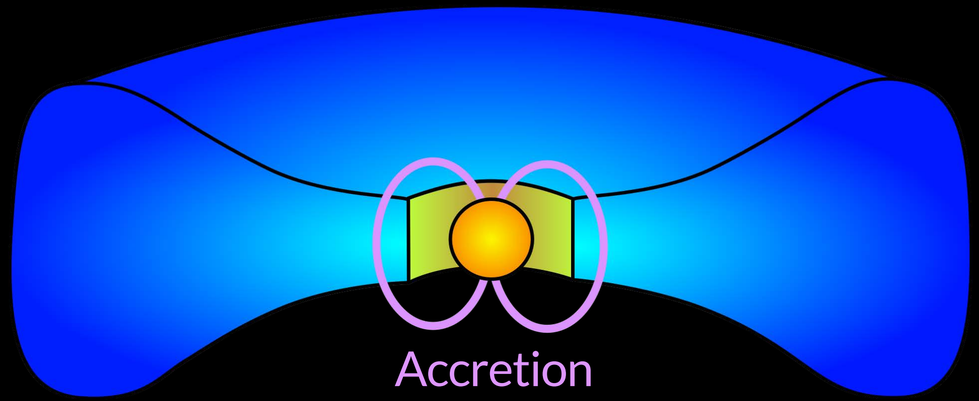
Spectral Energy Distribution (SED)

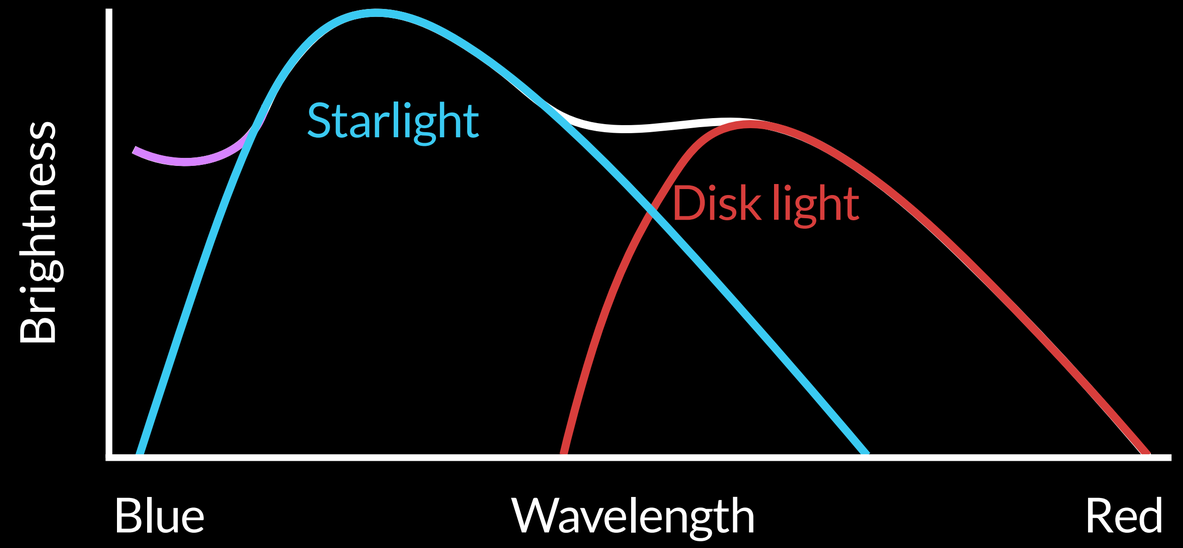


Spectral Energy Distribution (SED)

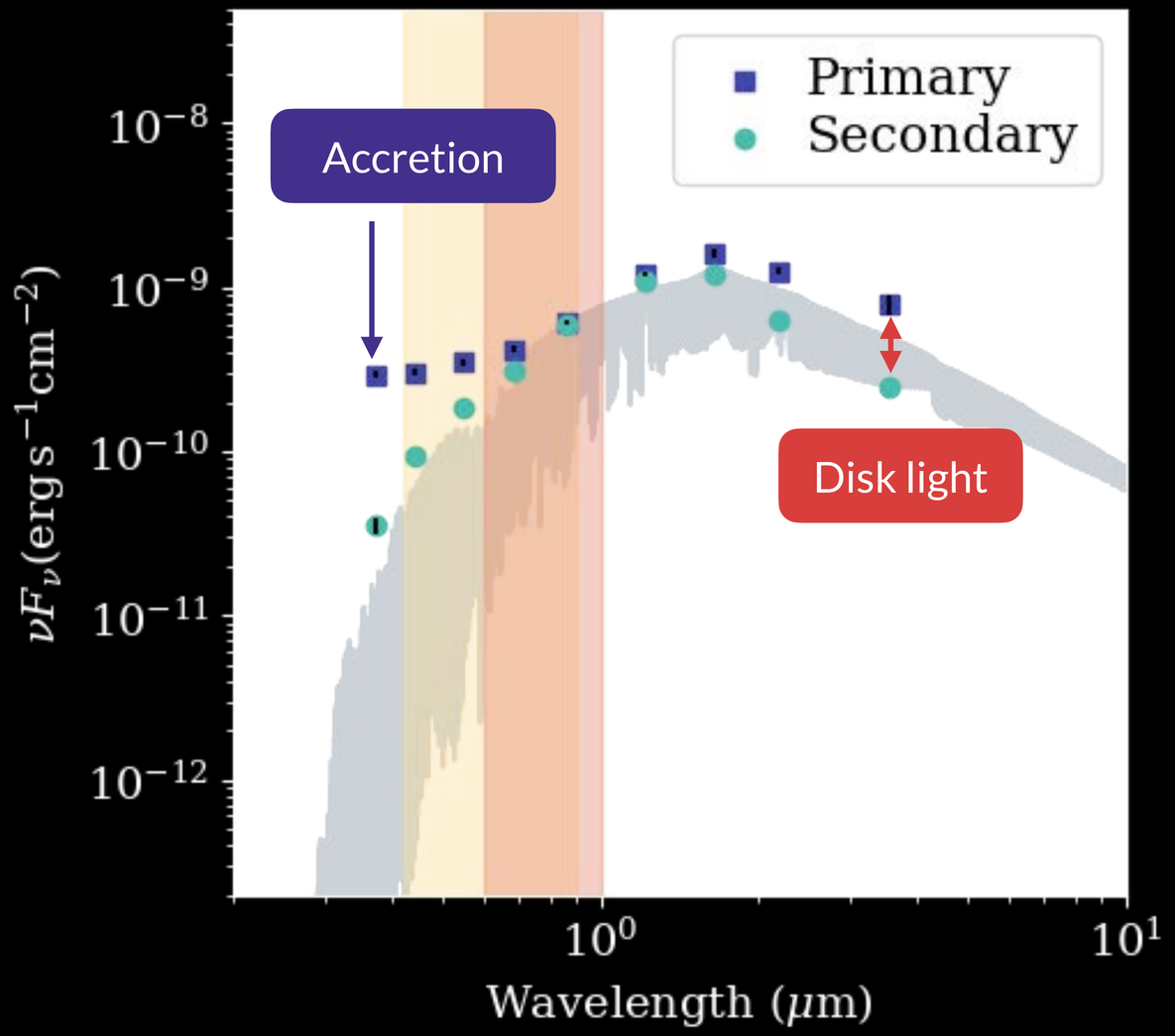


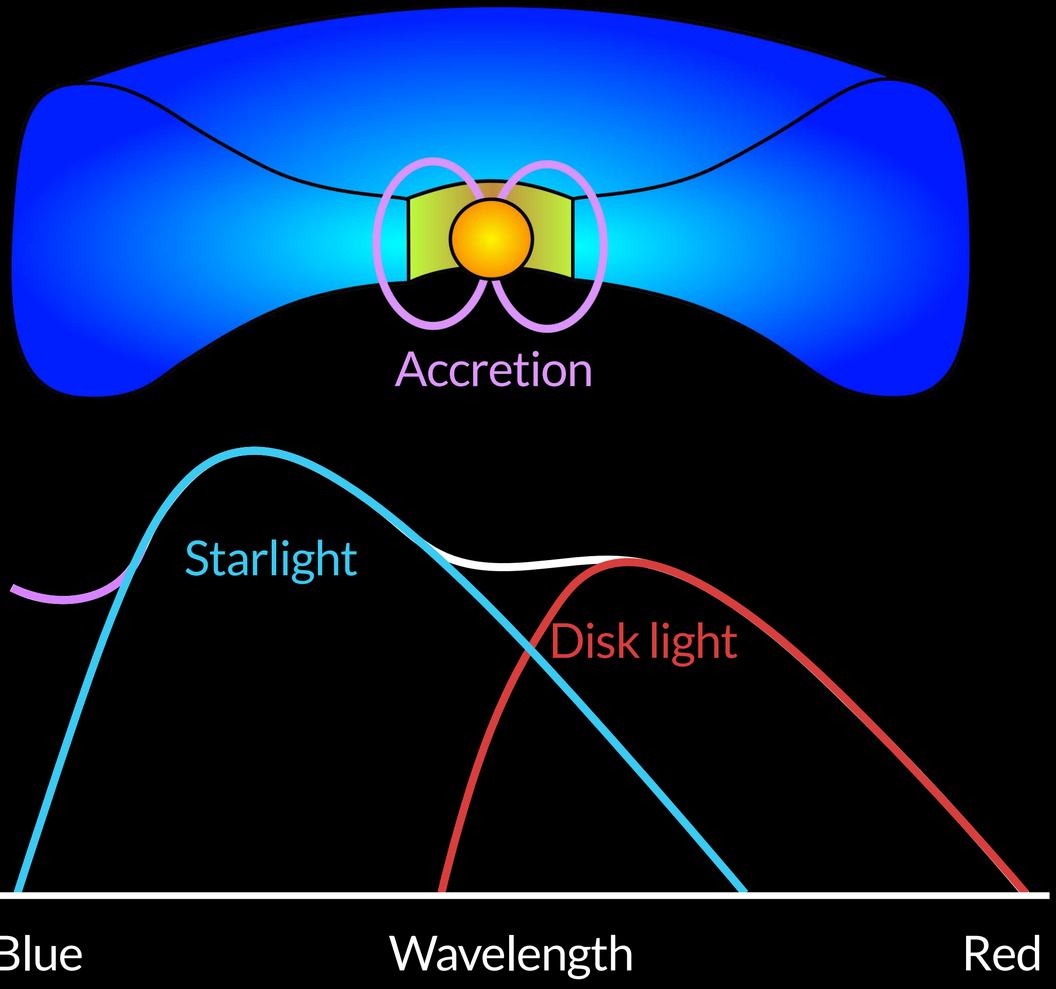
Spectral Energy Distribution (SED)

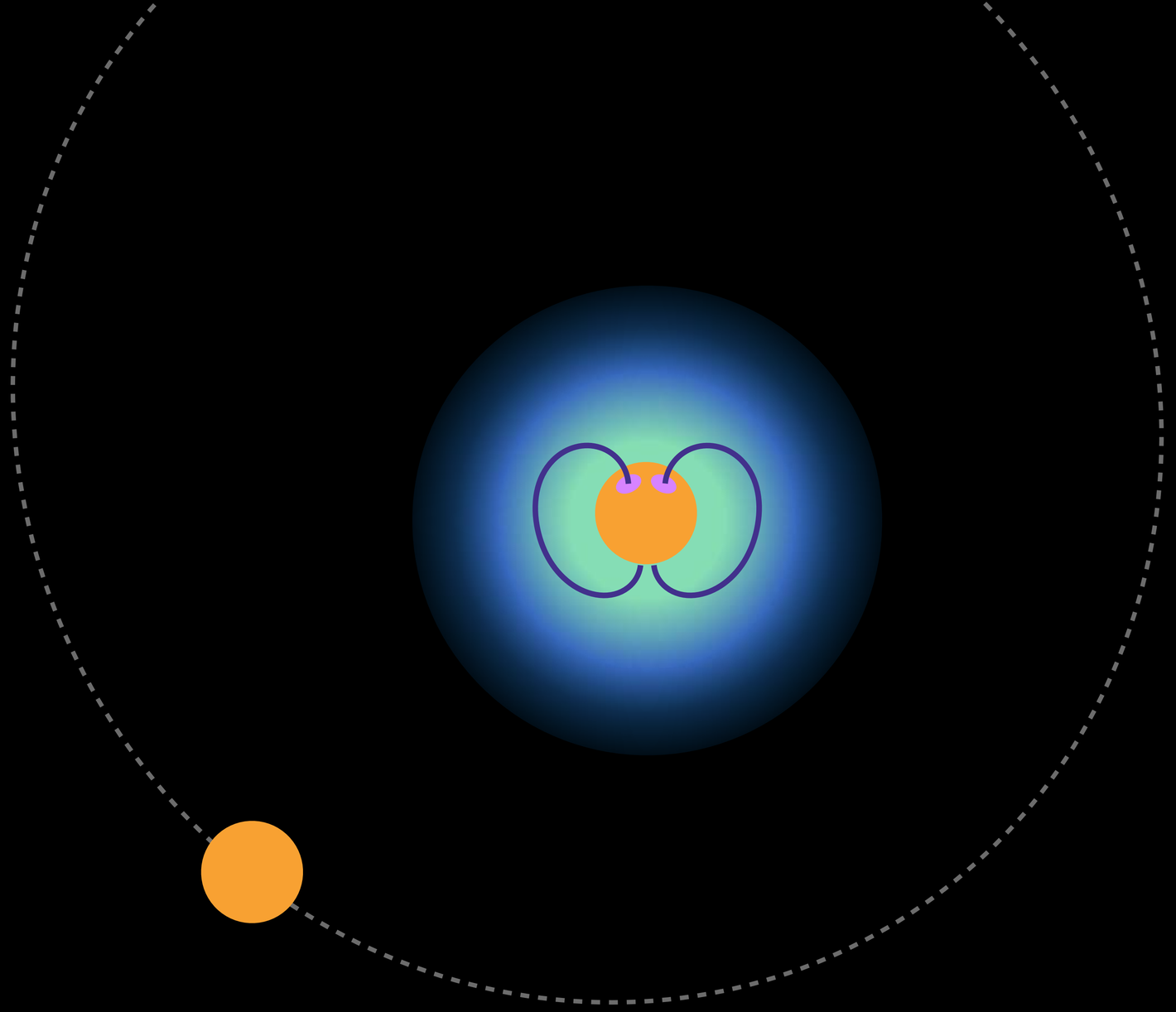




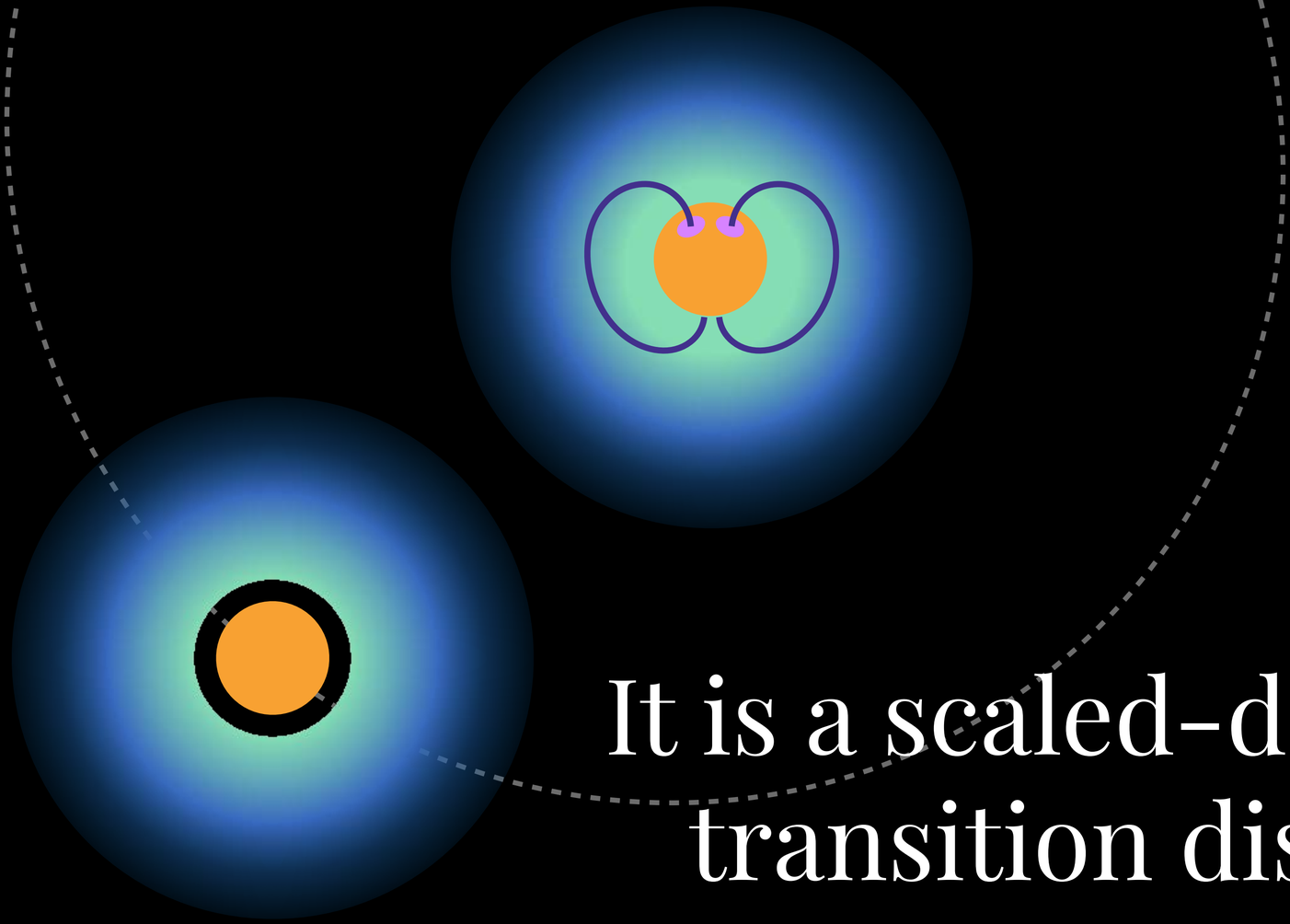
Spectral Energy Distribution (SED)



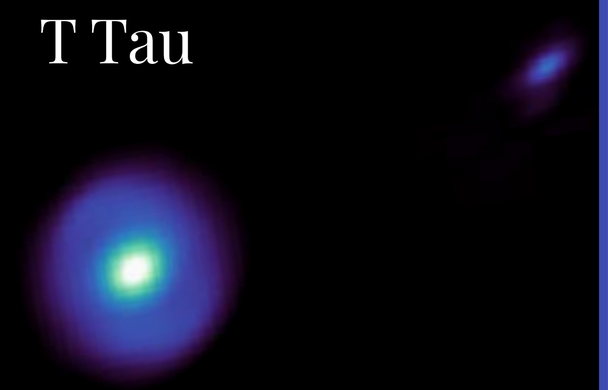


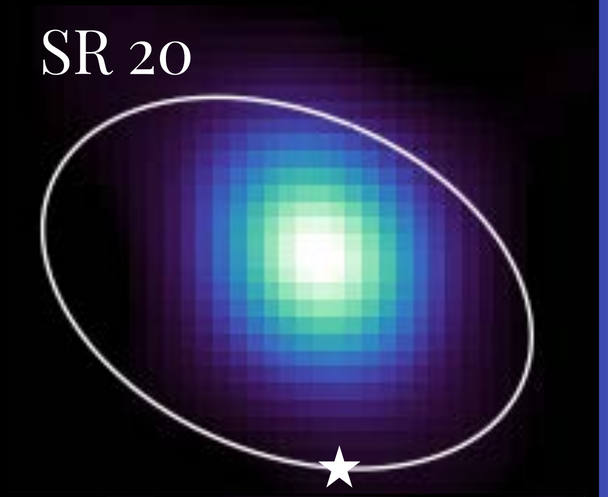


DF Tau B has an outer disk, but no inner disk.



It is a scaled-down transition disk!





Summary

1. Most stars form in pairs.
2. Young stars are surrounded by disks of gas and dust.
3. ALMA Survey of disks in young binary systems.
4. DF Tau's inner disk is missing: it is a mini-transition disk.
5. Our sample gives an unique picture of planet formation, and disk evolution.

Taylor Kutra: tkutra@lowell.edu